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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,893	08/09/2000	Suguru Tokita	ZU-392	5309
7590	04/16/2004		EXAMINER	
Sherman & Shalloway 413 North Washington Street Alexandria, VA 22314			GOFF II, JOHN L	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/601,893	TOKITA ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	John L. Goff	1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 15 December 2003.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-3 and 5-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3 and 5-16 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/26/03</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

1. This action is in response to the amendment received on 12/15/03.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blunt (U.S. Patent 3,475,369) in view of either one of Roberts (U.S. Patent 3,328,362) or Tomita et al. (U.S. Patent 5,252,677).

Blunt is directed to a resin composition useful as a coating and/or adhesive material for metal, plastic, and cellulosic substrates. Blunt teaches the composition comprises solid particles of an olefin copolymer dispersed in an organic solvent. Blunt teaches the copolymer comprises a first  $\alpha$ -olefin of a crystallizable copolymer such as ethylene and a second  $\alpha$ -olefin having 2 to 20 carbon atoms wherein the second  $\alpha$ -olefin is present in an amount of 2 to 25 mole percent and the copolymer is prepared with a metallocene catalyst. Blunt teaches the copolymer has a viscosity of 1 to 50 and a crystallinity less than 90%. Blunt teaches the dispersion generally has a solids content of 10-30% (Column 1 lines 23-25 and Column 2, lines 3-19 and Column 3, lines 3-6 and Column 4, lines 1-4, 13-16, and 26-31 and Column 6, lines 28-49 and 74-75 and Column 7, lines 10-19 and Column 11, lines 1-3 and 25-28 and Column 12, lines 27-34). Blunt is silent as to incorporating (e.g. by grafting) a polar monomer into the copolymer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate (e.g.

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by grafting) into the olefin copolymer taught by Blunt a polar monomer such as one suggested by either one of Roberts or Tomita et al. to form a resin composition having improved adhesiveness. As to the specific amount of polar monomer, one of ordinary skill in the art at the time the invention was made would have readily appreciated determining the optimum amount to give the resin a desired adhesiveness as determining this parameter is well within the ordinary skill of one in the art and would not require anything more than routine experimentation.

Regarding the particle size, Blunt teaches substantially all of the particles are less than 1 micron in their largest dimension (Column 2, lines 36-39), and thus, Blunt teaches that at least some of the particles are larger than 1 micron such that the claim limitation is met. Additionally, Blunt teaches the particles have an average particle size of 0.02 to 0.5 microns (Column 2, lines 20-27) such that it would have been obvious to one of ordinary skill in the art at the time the invention was made that the average particle size taught by Blunt would have included larger particles and in particular at least some particles having sizes greater than 1 micron. Furthermore, the background of Blunt teaches it was known to form the particles having sizes up to 500 microns and in particular 1-5 microns, the particles being used to form adhesive films wherein films of reduced thickness have small particle sizes (Column 1, lines 27-30, 40-43, and 64-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the particle size as a function of the desired thickness of the adhesive film as doing so would require nothing more than ordinary skill and routine experimentation.

Roberts discloses modifying copolymers, including those taught by Blunt, to include a polar monomer. Roberts teaches incorporating a polar monomer into the copolymers improves

their adhesiveness (Column 1, lines 10-32). Tomita et al. disclose modifying copolymer such as olefin copolymers with a polar monomer such that the adhesiveness of the copolymers is improved. Tomita et al. teach the polar monomer is present in an amount greater than 1% (Column 1, lines 8-25 and Column 2, lines 59-68 and Column 3, lines 1-5 and Column 9, lines 40-46 and Column 11, lines 49-60).

Regarding claims 2, 3, and 8-10, it is well known in the art to experimentally determine/optimize parameters such as those claimed (e.g. glass transition temperature, molecular weight distribution, etc.) such that absent any unexpected results one of ordinary skill in the art at the time the invention was made would have readily appreciated experimentally determine/optimizing the claimed variables as doing so would have required nothing more than ordinary skill and routine experimentation.

4. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blunt, Roberts, and Tomita et al. as applied above in paragraph 3, and further in view of Akazawa et al. (JP 63-378).

Blunt, Roberts, and Tomita et al. teach all of the limitations in claims 15 and 16 except for a specific teaching of using maleic anhydride as the polar monomer. However, it is noted that Roberts generally teaches using anhydride as the polar monomer (Column 3, lines 26-27), Blunt as modified by Roberts or Tomita et al. are not limited to any particular polar monomer, and maleic anhydride is a well known polar monomer used in graft polymerization of copolymers such as those taught by Blunt. One of ordinary skill in the art at the time the invention was made would have readily appreciated using as the polar monomer taught by Blunt as modified by Roberts or Tomita et al. maleic anhydride as maleic anhydride is a well known

polar monomer used in graft polymerization of olefin copolymers as shown for example by Akazawa et al.

Akazawa et al. are directed to graft polymerization of an olefin resin with a monomer such as maleic anhydride to increase the adhesiveness of the resin (See abstract).

***Response to Arguments***

5. Applicant's arguments filed 12/15/03 have been fully considered but they are not persuasive. Applicant argues, "None of the cited references teach a particle size limitation within the claimed range and instead teach much smaller diameters of 0.02 to 0.5  $\mu\text{m}$ ". As noted above, Blunt teaches substantially all of the particles are less than 1 micron in their largest dimension (Column 2, lines 36-39), and thus, Blunt teaches that at least some of the particles are larger than 1 micron such that the claim limitation is met. Additionally, Blunt teaches the particles have an average particle size of 0.02 to 0.5 microns (Column 2, lines 20-27) such that it would have been obvious to one of ordinary skill in the art at the time the invention was made that the average particle size taught by Blunt would have included larger particles and in particular at least some particles having sizes greater than 1 micron. Furthermore, the background of Blunt teaches it was known to form the particles having sizes up to 500 microns and in particular 1-5 microns, the particles being used to form adhesive films wherein films of reduced thickness have small particle sizes (Column 1, lines 27-30, 40-43, and 64-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the particle size as a function of the desired thickness of the

adhesive film as doing so would require nothing more than ordinary skill and routine experimentation.

Applicant further argues, “Furthermore, the presently claimed range of crystallinity less than 30% is a non-obvious range of a broader disclosed range. Although Blunt discloses the extremely broad range of a crystallinity of 90% or less, the presently claimed range of less than 30% unexpectedly results in a graft modified ethylene/a-olefin random copolymer having a melting point of not higher than 90° C while having high adhesion strength.” Applicants claims are not commensurate in scope with this argument as the claims do not require any particular melting point. Furthermore, Blunt teaches a crystallinity of 90% or less. Applicant has stated that a crystallinity of less than 30% results in an unexpected result, i.e. reduced melting point with high adhesion strength. The direct relationship of crystallinity and melting point is well known to one of ordinary skill in the art such that reducing the crystallinity to reduce the melting point would have been obvious/appreciated by one of ordinary skill in the art. Furthermore, applicants results on pages 99-104 show Example 1 having a grafted polar monomer and crystallinity of 20% has a higher adhesion strength than Comparative Example 1 not having a grafted polar monomer and crystallinity of 2% such that it appears the unexpected result of increased adhesion is a result of the grafted polar monomer rather than the crystallinity. In any event, the results do not compare two adhesive compositions of the present invention wherein the only difference lies in the crystallinity, i.e. one above 30% and one below 30%, such that there is no clear showing of unexpected results.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John L. Goff  
April 13, 2004

  
JEFF H. OFTENGARD  
PRIMARY EXAMINER  
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